

SECRET

25X1

The question set out to answer

Can NPIC's projected needs for personnel and money be significantly reduced by the application of improved information processing techniques? Crudely speaking, can they be automated away?

Machine techniques will increase rather than decrease costs

While machine techniques for processing optical data have something to offer NPIC, they are likely to increase the financial burden, not reduce it.

The NPIC White Paper and the IG Survey report are far too conservative

I am in substantial agreement with the conclusions of the NPIC White Paper and the very recent IG survey report. My only criticism is that--barring truly radical breakthrough in information handling (not merely application of existing techniques)--the estimates are far too conservative.

NPIC's R&D budget is grossly inadequate

NPIC stands on the frontier of its field. It cannot buy most of the instruments it requires off the shelf; they do not exist. This implies heavy developmental costs and long lead times. Viewed in this light, NPIC's R&D budget is most charitably described as "grossly inadequate" and its impressive accomplishments take on added stature.

Automatic change detection and pattern recognition are beyond the state of the art

Automatic change detection warrants further study, but I doubt that it offers much potential for savings under the present boundary conditions of operation. Automatic pattern recognition is still in a very preliminary feasibility-demonstration stage.

NPIC's film library is under good computer control but space is becoming critical

NPIC's film vaults are filling rapidly; retention of even a single copy of the flood of material envisioned from systems now under development will swamp them. The library aspect

SECRET

SECRET

of the problem is already under good computer control; it is basically a question of space. The storage problem will probably prove more severe than current estimates suggest.

NPIC has already made great strides in automation of photo interpretation

It is not widely appreciated that the NPIC PI already receives major, direct assistance from the computer. I conclude that the PI has already been automated to a degree which makes further dramatic savings unlikely.

Computerized collateral support of the PI may well be the most efficient operation of its type existing anywhere

NPIC handles and stores a staggering number of documents. The library system is already highly automated. (Our University library should function as well!) I am convinced that the people in charge of this important phase of NPIC activity have the situation well in hand. They may well be running the most efficient existing operation of this type.

NPIC's computer facilities and personnel manning them are impressive

I was impressed by the computer facilities and by the people who manage them. I greatly doubt that these men have left many significant stones unturned in their efforts to build an efficient operation.

Computer-oriented image manipulation techniques will increase the NPIC workload

Computer-oriented image restoration and related techniques can make an important contribution to NPIC activities, but it must be emphasized that these techniques will probably increase the NPIC workload, not reduce it.

NPIC is already far down the automation road

These people are competent and knowledgeable; they are farther down the automation road than I realized; their evolutionary plans in this direction seem reasonable.

SECRET

SECRET

NPIC has done far better than its R&D budget should have allowed

NPIC is more up-to-date and more efficient than anyone has a right to expect on the basis of their minimal R&D budget. I can rationalize this only in terms of dedication to their mission.

I see no major technological rabbits lurking in the hat that will significantly reduce NPIC's estimated requirements through 1970.

Breakthroughs would not solve the immediate problems NPIC faces

Even if breakthroughs can be made quickly, there is a real question whether they could be realized in hardware soon enough to save the day. Prudence suggests we not place much weight on this slender reed.

A solution might be found in changing NPIC's mission or modifying requirements

The situation might be changed radically by a redefinition of NPIC's mission and/or by modifications of the requirements levied on it by the community. But this merely begs the question.

There is a gross disparity between funds for collection and those for exploitation

There is a gross disparity between funds available for the collection of data and those available for the detailed reduction of that data. Why collect it in the first place, if you don't intend to use it. It is absurd to expend vast sums on data collection systems and refuse to accept any reasonable expense necessary to an analysis of that data.

Miscellaneous comments

The PI is with us until that remote (?) day when we can build a machine that is both intelligence and wise.

For the foreseeable future a human observer will have to tell the machine what to measure and where.

It is obvious that a recruiting program cannot be turned on and off without introducing undesirable transients.

SECRET